

WHAT IS CLAIMED IS:

1. A compound of the formula

wherein:

A is -H, amidino, or substituted amidino;

B is alkyl, cycloalkyl, cycloalkylalkyl, alkylcycloalkyl, alkylcycloalkylalkyl, aryl, aralkyl, alkylaryl, or alkylaralkyl;

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E is -H or, in combination with F, forms a 4-, 5-, 6-, or 7-membered azacycloalkane ring,

F is the a-carbon side chair of a naturally occuring a-amino acid, -H, alkyl, cycloalkyl, cycloalkyl, alkylcycloalkyl, alkylcycloalkylalkyl, aryl, substituted aryl, aralkyl, substituted aralkyl, heterocyclyl, substituted heterocyclyl, heterocyclylalkyl, substituted heterocyclylalkyl, or, in combination with E, forms a 4-, 5-, 6-, or 7-membered azacycloalkane ring,

G is alkyl, cycloalkyl, cycloalkylalkyl, alkylcycloalkyl, alkylcycloalkylalkyl, aryl, substituted aryl, aralkyl, substituted aralkyl, heterocyclyl, substituted heterocyclylalkyl, OR 1, or NR 1R2, where R 1 and R2 are independently -H, alkyl, cycloalkyl, cycloalkylalkyl, alkylcycloalkyl, alkylcycloalkylalkyl, aryl, aralkyl, alkylaryl, or alkylaralkyl, and

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R is/H-, alkyl, aryl, or aralkyl;

n is 0 to 6; and

p is 1 to 4;

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- 5 or a pharmaceutically acceptable salt thereof.
 - 2. A compound of claim 1 wherein F is -H, alkyl, hydroxymethyl, 1-hydroxyethyl, mercaptomethyl, 2-methylthioethyl, carboxymethyl, 2-carboxyethyl, 4-aminobutyl, 3-guanidinopropyl, cycloalkyl, cycloalkylalkyl, alkylcycloalkyl, alkylcycloalkylalkyl, aryl, substituted aryl, aralkyl, substituted aralkyl, heterocyclyl, substituted heterocyclylalkyl, substituted heterocyclylalkyl, or, in combination with E, forms a 4-, 5-, 6-, or 7-membered azacycloalkane ring, provided that heterocyclylalkyl is other than indol-3-ylmethyl.
- 3. A compound of claim 2 wherein F is -H, alkyl, hydroxymethyl, 1-hydroxyethyl, mercaptomethyl, 2-methylthioethyl, carboxymethyl, 2-carboxyethyl, 4-aminobutyl, 3-guanidinopropyl, cycloalkyl, cycloalkylalkyl, alkylcycloalkyl, alkylcycloalkylalkyl, aryl, substituted aryl, aralkyl, substituted aralkyl, or, in combination with E, forms a 4-, 5-, 6-, or 7-membered azacycloalkane ring.
 - 4. A compound of claim 3 wherein F is -H, alkyl, hydroxymethyl, 1-hydroxyethyl, mercaptomethyl, 2-methylthioethyl, carboxymethyl, 2-carboxyethyl, 4-aminobutyl, 3-guanidinopropyl, cycloalkyl, cycloalkylalkyl, alkylcycloalkyl, alkylcycloalkylalkyl, or, in combination with E, forms a 4-, 5-, 6-, or 7-membered azacycloalkane ring.
 - 5. A compound of claim 4 wherein B is alkyl, cycloalkyl, cycloalkylalkyl, alkylcycloalkyl, or alkylcycloalkylalkyl.
 - 6. A compound of the formula

wherein:

35 A is -H or amidino,

B is alkyl, cycloalkyl, cycloalkylalkyl, alkylcycloalkyl, alkylcycloalkyl, aryl, aralkyl, alkylaryl, or alkylaralkyl,

J is -H, alkyl, cycloalkyl, cycloalkylalkyl, alkylcycloalkyl, alkylcycloalkylalkyl, aryl, substituted aryl, aralkyl, substituted aralkyl,

L is OR^1 , or NR^1R^2 , where R^1 and R^2 are independently -H, alkyl, cycloalkyl, cycloalkyl, alkylcycloalkyl, alkylcycloalkyl, aryl, aralkyl, alkylaryl, or alkylaralkyl,

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m is 1 to 5,

n is 2 to 6, and

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p is 1 or 2;

or a pharmaceutically acceptable salt whereof.

7. A compound of claim 6 wherein

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A is -H,

B is alkyl, cycloalkyl, cycloalkyl alkylcycloalkyl, alkylcycloalkyl, alkylcycloalkyl,

J is -H, alkyl, cycloalkyl, cycloalkylalkyl, alkylcycloalkyl, or alkylcycloalkylalkyl,

m is 3, and

n is 3 or 4.

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8. A compound of claim 7 wherein

A is -H.

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B is alkyl,

Jis alkyl, cycloalkyl, or cycloalkylalkyl,

R¹ and R² are independently -H, alkyl, cycloalkyl, cycloalkylalkyl, alkylcycloalkyl, alkylcycloalkylalkyl,

m is 3,

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n is 3 or 4, and

p is 1.

10 9. A compound of claim 7 which is

N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl] valine,

N-[N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-D-valine,

N-[N-[N-(3-(piperidin-4-yl)propanoyl)-N-ethylglycyl]aspartyl] valine,

N-[N-[N-(5-(piperidin-4-yl)pentanoyl)-N-ethylglycyl]aspartyl] valine,

N-[N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-L-a-cyclohexyl glycine,

N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-b-cyclohexylalanine,

N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl] norleucine,

N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-L-a-(2,2-dimethyl)prop3-yl/glycine,

N-[N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-L-b-cis-decahydronaphth-2-ylalanine,

N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-a-aminozyclohexanecarboxylic acid,

N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-b-cyclohexyl-D-alanine,

N-[N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-b-decahydronaphth-1-ylalanine,

N-[N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-b-cyclooctylalanine,

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N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-b-adamant-1-ylalanine,

N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-b-(4-10 cyclohexyl)cyclohexylalanine,

N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-b-cycloheptylalanine,

N-[N-(4-(piperidin-4-yl)butanovl)-N-ethylglycyl]aspartyl]-a-cyclohexylpropylglycine,

N-[N-(4-(piperidin-4-yl)butanoy/)-N-ethylglycyl]aspartyl]-b-cyclooctylmethylalanine,

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N-[N-(4-(piperidin-4-yl)bytanoyl)-N-ethylglycyl]aspartyl]-b-cyclopentylalanine

N-[N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-L-b-decahydronaphth-1-yl alanine, or

N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-L-a-(2-cyclohexylethyl)glyoine,

or a pharmaceutically acceptable salt thereof.

10. / A compound of claim 7 which is

N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl] phenylalanine,

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N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-b-(1,2,3,4)-tetrahydronaphth-5-ylalanine,

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N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-L-b-naphth-1-yl alanine, or

N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-L-b-naphth-2-yl alanine,

or a pharmaceutically acceptable salt thereof.

11. A compound of claim 7 which is

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N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-L-b-cyclohexyl alanine amide,

N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-b-'
15 cyclooctylalanine amide,

N-[N-(4-(piperidin-4-yl)butanoyl) N ethylglycyl]aspartyl]-b-cyclohexylmethylalanine amide, or

N-[N-(4-(piperidin-4-yl)butaneyl)-N-ethylglycyl]aspartyl]-b-cyclohexylalanine ethyl amide,

or a pharmaceutically acceptable salt thereof.

25 12. A compound of claim 6 which is

N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-L-b-cyclohexyl alanine, ethyl ester,

N-[N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-b-cyclohexylmethylalanine ethyl ester, or

3-Adamant-1-ylpropyl-N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartate,

or a pharmaceutically acceptable salt thereof.

13. A compound of claim 1 which is

2-cyclohexyl-N-[N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl/ethylamine, or

N-[N-[N-(4-(piperidin-4-yl)butanoyl)-N-ethylglycyl]aspartyl]-a-5 cyclohexylmethylethanolamine,

or a pharmaceutically acceptable salt thereof.

- 14. A pharmaceutical composition comprising an antithrombotic effective
 10 amount of a compound of claim 1 and a pharmaceutically acceptable carrier.
 - 15. A pharmaceutical composition comprising an antithrombotic effective amount of a compound of claim 6 and a pharmaceutically acceptable carrier.
- 15 16. A method for the prevention of treatment of thrombosis in a mammal in need of such therapy comprising the administration of a therapeutically effective amount of a compound of claim 1.
- 17. A method for the prevention or treatment of thrombosis in a mammal in need of such therapy comprising the administration of a therapeutically effective amount of a compound of claim 6.
 - 18. A method for the prevention or treatment of thrombosis in a mammal in need of such therapy comprising the administration of a therapeutically effective amount of the composition of claim 13.
 - 19. A method for the prevention or treatment of thrombosis in a mammal in need of such therapy comprising the administration of a therapeutically effective amount of the composition of claim 14.



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